

REMARKS

In the outstanding Official Action, claims 1-3 and 5-10 were rejected under 35 USC 102(b) as being anticipated by Murphy, with claim 4 being rejected under 35 USC 103(a) as being unpatentable over Murphy in view of Tsang et al, all for the reasons of record.

Specifically with regard to independent claims 1 (method) and 10 (device), it is clear that the instant invention relates to a device and method in which a polysilicon plug is provided at the base of the trench and this polysilicon plug is oxidized to form an oxide plug at the base of the trench. It is respectfully submitted that this key limitation, recited in both of the independent claims, is neither shown in nor suggested by Murphy. More specifically, the portion of Murphy which is suggested to anticipate the foregoing limitations is indicated in the Action to be at column 2, lines 45-50 for both claim 1 and claim 10.

On the contrary, it is respectfully submitted that a careful reading of the cited portion of the specification of Murphy, in the context of the immediately preceding language, will clearly indicate that the teachings of Murphy are clearly distinguishable in this regard.

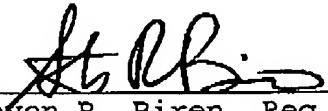
The specifically cited portion of Murphy (column 2, lines 45-50) discloses that the trenches are filled with polysilicon which is then doped. However, the text immediately preceding this

disclosure clearly states that "prior to filling the trenches with polysilicon, a selective oxide layer is deposited on the bottom of the trenches with the thickness of the deposited oxide layer being greater at the bottom of the trenches than at the sidewalls" (column 2, lines 42-47). Thus, it is clear that the oxide layer which is thicker at the bottom of the trenches than at the sidewalls is formed by the deposition of a selective oxide layer prior to the provision of the polysilicon in the trenches, a teaching which is substantially different from that of the instant invention as claimed, wherein a polysilicon plug is formed at the base of the trench and then this polysilicon plug is thermally oxidized to form an oxide plug.

Furthermore, it is noted that the portion of the specification cited to establish anticipation is in the "Summary" portion of the reference, and that a more complete description of the relevant teachings is provided in the detailed description in the first paragraph in column 5. It is noted that this more detailed description clearly supports the argument presented herein, namely that the reference teaches the deposition of a selective oxide as previously discussed, rather than the provision of a polysilicon plug which is then oxidized to provide an oxide plug in the trenches.

In view of the foregoing, it is respectfully submitted that independent claims 1 and 10, and the remaining claims depending therefrom, are clearly patentably distinguishable over the cited and applied references. Accordingly, allowance of the instant application is respectfully submitted to be justified at this time, and favorable consideration is earnestly solicited.

Respectfully submitted,

By   
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